

The Mediating Effect of Mindfulness on the Relationship Between Mental Illness Self-Stigma  
and General Psychological Distress: A Cross-Sectional Study

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### Abstract

Mental illness self-stigma is the devaluation, shame, secrecy, and social withdrawal triggered by applying negative stereotypes about mental illness to oneself. Evidence suggests that this form of self-stigma is associated with increased psychological distress and reduced quality of life.

Mindfulness is the process of non-judgmental and accepting attention to experiences in the present moment, which may account for the link between mental illness self-stigma and psychological distress. The proposed cross-sectional survey of a non-clinical college sample aimed to investigate (1) whether mental illness self-stigma is positively associated with psychological distress and (2) whether mindfulness mediates the association between mental illness self-stigma and psychological distress. The results of the study revealed that mental illness self-stigma (and a modified version intended to capture self-stigma for general psychological distress) is positively associated with psychological distress and that mindfulness acts as a partial mediator on this relationship. Mindfulness may partially explain this link by capturing how individuals mentally process the negative associations of mental illness stereotypes.

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## The Mediating Effect of Mindfulness on the Relationship Between Mental Illness Self-Stigma and General Psychological Distress: A Cross-Sectional Study

College students are increasingly reporting psychological distress (Rosenthal & Schreiner, 2000; Verger et al., 2009). One factor that is potentially associated with psychological distress in college students is mental illness self-stigma (or internalized stigma). In behavioral science literature, mental illness self-stigma is often defined as the devaluation, shame, secrecy, and social withdrawal triggered by applying negative stereotypes about mental illness to oneself (Corrigan, 1998). If mental illness self-stigma is found to be associated with psychological distress in a sample of college students, it is also important to examine why this association exists. One potential mediator that may account for this potential association is mindfulness, which is defined as the process of non-judgmental and accepting attention to experiences in the present moment (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). As discussed in detail below, evidence suggests that mindfulness may serve as a mediator in the relationship between mental illness self-stigma and psychological distress (e.g., Masuda & Wendell, 2010; Masuda et al., 2011; Gayner et al., 2012). The aim of the present cross-sectional study was twofold: (1) to investigate whether mental illness self-stigma is in fact positively associated with psychological distress and (2) to investigate whether the association between mental illness self-stigma and psychological distress is established in part through mindfulness.

### **Psychological Distress in College Students**

Mental health is a serious concern for college students. According to a survey of 26,000 students across 70 colleges and universities in the U.S., 6% of undergraduates reported seriously considering suicide in the previous 12 months (Drum, Brownson, Burton Denmark, & Smith, 2009). Another set of studies found that between 15% and 17% of students screened positive for

a depressive or anxiety disorder (e.g., Eisenberg, Gollust, Golberstein, & Hefner, 2007; Hunt & Eisenberg, 2010). Yet another set of studies reported that large percentages of college students experienced at least subclinical levels of anger (41.4%), anxiety (44.5%), and depression (29%; e.g., Rosenthal & Schreiner, 2000).

In addition to assessing distinct symptom categories, it is important to examine general psychological distress in college students because of its transdiagnostic and broadly applicable nature. Often used in transdiagnostic research, the General Health Questionnaire-12 (GHQ-12; Goldberg & Williams, 1988) is a self-report measure designed to capture psychological distress by inquiring about two main facets of psychiatric phenomena: (1) the inability to carry out one's normal health functions and (2) the emergence of new symptoms that are distressing (Werneke, Goldberg, Yalcin, & Üstün, 2000). By defining psychological distress qualitatively in this way, researchers can better understand the prevalence of psychological distress on college campuses.

Extant findings suggest that general psychological distress is pervasive on college campuses. For example, Eskin et al. (2016) investigated the prevalence of psychological distress (GHQ-12) across university students from 12 different nations, including the United States. Of the 5,572 students surveyed, 41.6% scored above the cut-off point, indicating significant levels of psychological distress. Additionally, a series of studies by Masuda and his colleagues (e.g., Masuda, Anderson, & Sheehan, 2009; Masuda, Wendell, Chou, & Feinstein, 2010) showed that levels of psychological distress were comparable across Asian American, European American, and African American college students. Given the pervasive nature of psychological distress among college students, more research is needed to understand and examine its potential correlates.

One such correlate is mental illness self-stigma. From a contemporary behavior analytic perspective of cognitive process (Hayes, Barnes-Holmes, & Roche, 2001), mental illness self-stigma appears to be particularly relevant to psychological distress. This form of stigma reflects one's appraisal of psychological distress as well as the perceived implications of having such an experience.

### **Models of Mental Illness Self-Stigma**

To understand mental illness self-stigma, it is important first to understand the construct of stigma. Research on mental illness self-stigma is a specialized subfield encompassed within the larger umbrella of stigma research. Definitions of stigma vary and have evolved over time (Stafford & Scott, 1986). A dictionary definition such as "a mark of disgrace" or synonyms such as "blemish," "stain" or "shame" are unlikely to convey the complexity and multi-dimensional nature of stigma (Link & Phelan, 2001). Erving Goffman (1963) defined stigma as an "attribute that is deeply discrediting" and that reduces the bearer "from a whole and usual person to a tainted, discounted one" (p. 3). Since Goffman's seminal book *Stigma: Notes on the Management of Spoiled Identity*, stigma researchers have sought to clarify the multiple dimensions of stigma and how they operate.

Link and Phelan (2001) deconstruct stigma into five interrelated processes: (1) labeling, (2) stereotyping, (3) separation, (4) status loss, and (5) discrimination. First, stigma involves the process of labeling. Labeling is a critical first step in the stigma process. Individuals or groups are labeled based upon particular characteristics and individual differences. Some of these differences may be salient for a particular period, place, and culture (e.g., skin color or gender), while others may possess less salience (e.g., eye color or ear shape). Second, stigma involves the process of stereotyping -- the associating of the labeled individual or group with particular

attributes and emotional reactions. For example, labels such as “mental patient” evoke fear and concern of danger, while more neutral labels like “former back pain patient” evokes either sympathy or little reaction at all. Third, labels with negative connotations become the automatic basis for separation and differentiation between in-group and out-group (e.g., “us” and “them”). Shared characteristics serve as the basis for organizing an in-group of individuals, who prefer to think that their shared characteristics are superior or favorable, and that the out-group’s stereotypical features are inferior, and, in the most extreme cases, less than human. Because of these first three processes, stigma appears to be a convenient resource for the quick and automatic categorization of others. Further, the stereotypical feature imposed on another person by a particular label automatically categorizes the person as a member of the in-group or out-group (e.g., people with schizophrenia become “schizophrenics” and they are different from us).

Fourth, stigma necessarily implies a loss of status (Link & Phelan, 2001). When an individual is labeled in a way that associates them with a given group, they are automatically associated with the positive or negative stereotypes attributed to that group even if these stereotypes are not accurate characterizations of the individual. For individuals who are associated with a negatively perceived social group, such associations with negative characteristics are often unjust and detrimental to that person. For example, when an individual is labeled a “psychiatric patient,” others may see him or her as incapable or untrustworthy, even if these attributes are not accurate for that individual. Lastly, stigma inevitably results in discrimination on individual and structural levels. Discrimination is a form of harm imposed upon individuals due to their association with a marginalized group, and it differs from the other dimensions of stigma in that it involves actions done to those individuals (Link & Phelan, 1991; Sayce, 1998). Common examples of discrimination include rejecting a job application or

refusing to rent housing to an individual based upon the applicant's affiliation with a marginalized group. Association with a stigmatized group results in discrimination that can lead to reduced safety, respect, and prestige in educational, occupational, and other social settings. Finally, according to Link and Phelan (2001), these five components do not occur in a linear fashion, but instead, co-occur in an inter-related manner; the whole of stigma is greater than the sum of its parts.

Informed by Link and Phelan's model of stigma (2001), Corrigan (2004) further elucidates stigma related to mental illness. According to Corrigan, stigma is triggered based upon cues. Cues include labels as described in the model of Link and Phelan (2001), as well as other characteristics specific to mental illness, such as psychiatric symptoms, social skills deficits, and physical appearance. Corrigan recognizes that mental illness stigma is often cued by bizarre behavior, inappropriate affect, or unkept appearance, even when the mental health status of a stigmatized individual may be ambiguous.

Corrigan (2004) also categorizes stigma into two types: *public stigma* and *self-stigma*. *Public stigma* is "what a naive public does to the stigmatized group when they endorse the prejudice about that group", whereas *self-stigma* is "what members of a stigmatized group may do to themselves if they internalize the public stigma" (Corrigan, 2004, p. 616). Public stigma and self-stigma both involve cues, stereotypes, prejudice, and discrimination but differ in reference point (other vs. self). In the case of public stigma, stigma is directed toward others, and prejudice might involve statements such as "I agree people with mental illness are dangerous and I am afraid of them." On the other hand, in self-stigma, prejudice manifests in such attitudes, beliefs, and self-statements such as "I have a mental illness so I must be incompetent." According to Corrigan, public stigma often dictates negative images and ideas about mental



illness, which are internalized by individuals as self-stigma. As such, self-stigma can result in diminished self-esteem (i.e., low self-worth) and self-efficacy (i.e., the belief in oneself to successfully perform behaviors and achieve goals; Corrigan, 2004).

Recently, Ritsher, Otilingam, & Grahales (2003) developed a conceptual model of mental illness self-stigma based upon the models developed by Link and Phelan (2001), Corrigan (2004), and others (Goffman, 1963; Ross & Rosser, 1996). In the model proposed by Ritsher et al. (2008), general stigma is defined as “the status loss and discrimination triggered by negative stereotypes about people labeled as having mental illness,” and mental illness self-stigma is defined as the “inner subjective experience of stigma and its psychological effects” (p. 3). Individuals who have been labeled as mentally ill learn of “ambient stereotypes” through social networks and verbal communities, popular media, and other agents of socialization. These stereotypes are “metabolized” and endorsed as applying to oneself, resulting in feelings of shame, denial, and fear of discrimination.

Following the model of mental illness self-stigma, Ritsher et al. (2003) also developed and validated a self-report scale of mental illness self-stigma, called the Internalized Stigma of Mental Illness scale (ISMI). The ISMI categorizes mental illness self-stigma into five factors: stereotype endorsement, perceived discrimination, alienation, social withdrawal, and stigma resistance. The constructs of stereotype endorsement and perceived discrimination in the ISMI are consistent with stereotype and discrimination described in Link and Phelan (2001). In addition to these commonly emphasized factors, the ISMI captures unique behavioral elements with respect to self-stigma, such as alienation and social withdrawal. Finally, stigma resistance in the ISMI captures feelings of self-worth that help to protect against self-stigma and is represented by items such as: “I can have a good, fulfilling life, despite my mental illness.”

Furthermore, Hayes and his colleagues (e.g., Hayes, Niccolls, Masuda, & Rye, 2002) have proposed a theoretical model for how mental illness self-stigma functions and how it is associated with negative outcome variables. Their model of stigma is based on a behavior analytic account of human cognition and language called relational frame theory (RFT; Hayes, et al., 2001). RFT postulates that human language processes can often become overextended in a maladaptive way, resulting in self-referential thoughts (e.g., “I am ...”), many of which may be distressing, being taken as literal truths (Hayes, Strosahl, & Wilson, 2012). This literalization process is called *cognitive fusion*, wherein one becomes identified and fused with a given self-referential thought. In the context of self-stigma, cognitive fusion may take the form of attachment to internalized labels (e.g., “mentally ill”). When consumed, or fused, with the literal meaning of a verbal label, an individual may become divorced from the reference point which such a label was meant to represent (e.g., a set of behavioral expressions). When excessively fused with one’s own thoughts, the person becomes removed from present moment experience and mentally consumed in a narrow chain of learned verbal associations connected with the verbal label, which is often extremely negative (Hayes et al., 2001).

RFT’s account of cognitive fusion is relevant to the study of mental illness self-stigma as it provides a theoretical explanation for why self-stigma may be associated with psychological distress. Consistent with Link and Phelan (2001), an RFT account of stigma argues that prejudicial thinking infuses social categorizations of mental illness with negative judgments (e.g., objectification and dehumanization), which become endorsed by both society and the individuals to which they are applied (Masuda, Hill, Morgan, & Cohen, 2012). Such negative associations, encouraged by society, the nature of language, and even the psychotherapy community, are not controllable by the individual and are in some ways an inevitable byproduct

of human language (Hayes, et al., 2012). However, the strength of endorsement or internalization may depend upon the degree to which individuals fuse to such labels. From an RFT perspective (Hayes et al., 2001), variance in the tendency to cognitively fuse and the ability to defuse might be able to account for the association between mental illness self-stigma and psychological distress.

### **Mental Illness Self-Stigma and Psychological Distress**

To date, no study has directly examined the association between mental illness self-stigma and psychological distress in a sample of college students. However, pertinent literature suggests a potential positive association between mental illness self-stigma and psychological distress, which is further supported by RFT. For example, Masuda and Latzman (2011) studied the relationship between stigmatizing attitudes toward a mental disorder and those who have a mental disorder in a sample of undergraduate students ( $N = 573$ ), using the Stigmatizing Attitudes Believability scale (SAB; Masuda, Price, Anderson, Schmertz, & Calamaras, 2009) and the General Health Questionnaire (GHQ-12). The SAB is a self-report questionnaire that measures the believability of stigmatizing attitudes toward people with psychological disorders. While it does not explicitly seek to capture self-stigma, the items closely resemble typical self-stigmatizing thoughts. More specifically, one factor of the SAB – Course/Origin – captures an individual's view toward the cause, prognosis, and treatment of a mental disorder and is based upon items such as: “Those with a psychological disorder will not improve even if they are treated” and “A person with a psychological disorder is the one to be blamed for his or her problems” (Masuda et al., 2009, p. 1262). In Masuda and Latzman (2011), the Course/Origin factor of mental health stigma was significantly correlated with psychological distress.

Similarly, extant findings demonstrate the positive association between general self-stigma and numerous negative behavioral health outcomes, such as reduced help-seeking from psychological services in college students (Eisenberg, Downs, Golberstein, & Zivin, 2009; Vogel, Wade, & Haake, 2006) and lowered psychosocial treatment compliance in individuals with depression (Fung, Tsang, Corrigan, Lam, & Cheng, 2007). For individuals diagnosed with schizophrenia, self-stigma has been linked to lower quality of life (Yanos, Roe, Markus, & Lysaker, 2008; Vauth et al., 2007) and increased avoidant coping strategies (Vauth et al., 2007). Relevant to the present proposed study, another study showed that self-stigma was positively associated with psychological distress in individuals with vitiligo (a skin pigmentation disorder; Kent, 1999).

Multiple theories propose explanations for why mental illness self-stigma may be associated with psychological distress. In this context, the RFT model of Hayes et al. (2001) suggests that variance in individuals' tendency toward cognitive fusion with self-stigmatizing labels may account for the degree to which individuals endorse psychological distress (Hayes et al., 1999). Mindfulness is a construct which reflects the ability to cognitively defuse and non-judgmentally attend to thoughts and feelings. For this reason, mindfulness may operate as a key mediating factor in the relationship between mental illness self-stigma and psychological distress.

### **Mindfulness**

Definitions and operationalizations of mindfulness vary throughout the psychology literature (Lutz, Jha, Dunne, & Saron, 2015). However, mindfulness is commonly defined as “bringing one’s complete attention to the experiences occurring in the present moment, in a nonjudgmental or accepting way” (Baer et al., 2006, p. 27). This definition largely stems from

Jon Kabat-Zinn's conceptualization of mindfulness (Kabat-Zinn, 1990). Mindfulness, when defined in this way, is viewed as a trainable skill that can be practiced in meditation exercises such as mindful breathing and can also be manifested in everyday activities, such as mindful eating, walking, or socializing with others (Brown & Ryan, 2003). Kabat-Zinn's account of mindfulness also forms the theoretical foundation for mindfulness-based interventions, such as Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 1990) and Mindfulness Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2012).

In research and practice, the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006) is one of the most widely used self-report measures of mindfulness. The FFMQ synthesizes multiple self-report measures of mindfulness into a single five-faceted measure of mindfulness (i.e., observing, describing, non-reactivity, non-judging, and acting with awareness). This 39-item measure is theorized to collectively reflect the process of cognitive defusion, which is defined as "the process of relating to thoughts as just thoughts so as to reduce their automatic impact" (Hayes, Villatte, Levin, & Hildebrandt, 2011, p.155).

### **Mindfulness as a Mediator between Mental Illness Self-stigma and Psychological Distress**

From an RFT perspective, it is possible to speculate that the positive association between self-stigmatizing thoughts and psychological distress is established, in part, due to the shared features of cognitive fusion (e.g., diminished mindfulness). Alternatively, mindfulness may serve as a pathway between mental illness self-stigma and psychological distress. Furthermore, relating to thoughts in an unmindful and fused way, as in the case of cognitive fusion, could potentially be linked to increased psychological distress.

One line of evidence suggests that mindfulness may be a critical underlying process in the link between self-stigma and psychological distress for college students. For example,

Masuda and Latzman (2011) found that psychological flexibility, a construct that encompasses the process of mindful awareness and cognitive defusion, fully mediated the relationship between the Course/Origin aspect of mental health stigma and psychological distress. Similarly, Masuda and Wendell (2010) showed that mindful awareness mediated the association between disordered eating cognition and psychological distress. Disordered eating cognition (e.g., “I’m ashamed of how I look”) is relevant to the present study since it reflects internalized shame (e.g., Masuda, Latner, Barile, & Sargent, 2018), which is a major feature of mental illness self-stigma.

Another study with a non-college sample found that self-stigma served as a mediator in the relationship between mindfulness and a behavioral outcome variable. In a cross-sectional study of 34 individuals who experienced first episode psychosis (FEP), Mersh, Jones, and Oliver (2015) examined the association among mental illness self-stigma (i.e., ISMI), mindfulness (i.e., FFMQ), and social functioning. A bootstrapping mediation analysis (Hayes, 2013) revealed that mental illness self-stigma mediated the relationship between mindfulness and social functioning. The authors found that higher levels of mindfulness predicted lower self-stigma and better social functioning. Furthermore, the relationship between mindfulness and social functioning was partially mediated by self-stigma, suggesting that the connection between mindfulness and social functioning is partially explicable through self-stigma. Although this is a different formulation than the present study (i.e., self-stigma as a mediator opposed to mindfulness as a mediator), the authors draw similar theoretical conclusions, suggesting that the evidence supports “the possibility that people with FEP who are more mindful believe self-stigmatising thoughts less, and so experience lower levels of self-stigma, and consequently have better social functioning” (Mersh et al., 2015, p. 6). The mediation relationship between mindfulness, self-stigma and a behavioral health outcome variable, as well as the use of the same scales and experimental

design of the current proposed study, lends further credence to the usefulness of the current study's design.

Finally, one intervention study examined the role of mindfulness in the link between self-stigma and psychological distress (Gayner et al., 2012). Specifically, this study examined the effect of MBSR on negative psychological and behavioral effects – avoidance, negative affect, and depression in homosexual men living with HIV. Gayner et al. (2012) did not directly examine the mediating role of mindfulness. However, informed by Gilbert and Procter (2006), their clinical rationale for the study was particularly relevant to that of the present cross-sectional study. Specifically, they hypothesized that an MBSR intervention could help homosexual men living with HIV in the areas of greater negative affect, depression, and avoidance by cultivating mindfulness and disengagement from preoccupation with the narratives of internalized stigma. Results revealed that an increase in mindfulness was significantly associated with reductions in distress and depression. These results, suggestive of mindfulness as a mechanism of reduction in negative affect, depression, and avoidance, may be transferable to individuals suffering from self-stigma with respect to mental illness.

Based upon the findings in these extant studies (e.g., Gayner et al., 2012; Masuda et al., 2011), the mediation effect of mindfulness on the relationship between mental illness self-stigma and psychological distress is tenable. If evidence for such a mediation role is revealed, this would potentially highlight the key role of mindfulness in the association between mental illness self-stigma and psychological distress as well as the possibility that mindfulness interventions can reduce distress related to mental illness self-stigma (Masuda et al., 2012).

### **Research Questions**

Informed by the above-mentioned literature and empirical evidence, the present cross-

sectional study examined the following research questions using a sample of college students. First, the study examined whether there was a positive association between mental illness self-stigma and psychological distress. Second, the study examined whether mindfulness mediates the association between mental illness self-stigma and psychological distress. Based upon evidence from prior studies demonstrating the negative effects of self-stigma on psychological health (Kent, 1999; Mak & Wu, 2006; Vauth et al., 2007; Yanos et al., 2008), it was hypothesized that mental illness self-stigma would be positively associated with general psychological distress in the present sample of ethnically diverse college students. Furthermore, it was predicted that mindfulness would mediate the association between mental illness self-stigma and general psychological distress.

## **Method**

### **Participants**

One-hundred eighty undergraduates ( $N=180$ ) from diverse ethnic backgrounds were recruited from the University of Hawai‘i at Mānoa. Participants were recruited through the online participant management platform SONA Systems ([www.sona-systems.com](http://www.sona-systems.com)) and completed self-report measures online from January 2018 to December 2018. The inclusion criteria were (a) English fluency and (b) at least 18 years of age or older. Participants were asked to complete a survey package that includes questionnaires used in the present study. Additionally, as employed in previous studies (e.g., Masuda et al. 2011), those ( $n = 6$ ) who completed the survey outside 2 standard deviations from the mean completion time ( $M = 48.57$  minutes,  $SD = 17.78$ ) were removed from the study because of the questionable validity of their responses. Furthermore, three validity check questions (e.g., “Please answer ‘Very often’ to this item.”) were embedded within the battery of survey measures to ensure that participants were not



answering questions without paying attention. Individuals who incorrectly responded to at least one of these questions ( $n = 47$ ) were excluded.

Of the remaining sample who were included in this study ( $n = 127$ ), 63% were female ( $n = 80$ ), and 37% were male ( $n = 47$ ). The mean age was 20.87 years ( $SD = 3.8$ ), ranging from 17 to 32 years old. The ethnic composition of the sample was representative of the university with approximately 31% ( $n = 39$ ) identifying as Asian, 28% ( $n = 35$ ) identifying as White (non-Hispanic), 28% ( $n = 35$ ) identifying as Bi-racial/Multi-cultural, 8% ( $n = 10$ ) identifying as Latina/o, 4% ( $n = 5$ ) identifying as Hawaiian, 2% ( $n = 2$ ) identifying as Pacific Islander, and 1% ( $n = 1$ ) as Black (non-Hispanic) (University of Hawai'i at Mānoa, 2018). Approximately 87% ( $n = 110$ ) identified as heterosexual, 3% ( $n = 4$ ) as homosexual, 6% ( $n = 8$ ) as bisexual, 2% ( $n = 2$ ) as other, and 2% ( $n = 3$ ) declined to answer.

## Measures

The following measures were used to assess demographic information, self-stigma, mindfulness, and general psychological distress.

**Demographic information (Appendix A).** Participants self-identified along particular demographic categories according to multiple choice questions, always with the option to qualify an “Other” choice. The demographic variables collected included age, gender, ethnicity, sexual orientation, religious beliefs, and past experience with seeking professional psychological help. Age was a fill in the blank question. Gender options included Male, Female, and Other (please specify). Ethnicity options included: Native American, Hispanic, Asian, Pacific Islander, White (non-Hispanic), Black (non-Hispanic), Other, or Bi-racial/Multi-cultural. If the participant identified as Hispanic or Asian, they were given the option to specify. Options for sexual orientation included Heterosexual, Homosexual, Bisexual, or Other (please specify). Options for

religion/spiritual practice included: Baha'i, Buddhist, Hawaiian Indigenous Beliefs, Hindu, Muslim, Jewish, Mormon, Protestant, Roman Catholic, Southern Baptist, United Methodist, Other (please specify), or None. History of psychological services was captured through answering the question: "Have you ever sought a professional psychological service (e.g., a service from a psychiatrist, psychologist, counselor, and other psychological professional) for a personal problem?"

**Mental Illness Self-Stigma (ISMI-29; Appendix B).** Two versions of the Internalized Self-Stigma for Mental Illness scale-29 item version (ISMI-29; Ritsher, Otilingam, & Grahales, 2003) were used to measure mental illness self-stigma. The first version was the original ISMI, a 29-item self-report questionnaire designed to measure the degree to which people with mental illness apply negative stereotypes, biases, and discrimination to themselves. The scale uses a 4-point Likert scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Items are organized into five factors: Alienation: (e.g., "I feel out of place in the world because I have a mental illness."); Stereotype Endorsement: (e.g., "I can't contribute anything to society because I have a mental illness."); Discrimination Experience (e.g., "People ignore me or take me less seriously just because I have a mental illness."); Social Withdrawal (e.g., "I don't talk about myself much because I don't want to burden others with my mental illness."); and Stigma Resistance (e.g., "I feel comfortable being seen in public with an obviously mentally ill person."). Each subscale is calculated by adding up the scores of each item answered, and dividing by the total number answered. The composite score is calculated by adding up all of the subscales and dividing by the amount of subscales; the Stigma Resistance subscale is reverse scored. The internal reliability of the composite ISMI-29 for a sample of mental health outpatients was strong (i.e., Cronbach alpha,  $\alpha = 0.87$ ). Test-retest reliability was also high,  $r = .92$  ( $p < .05$ ,  $N = 16$ ). The ISMI-29 has

been translated into 49 languages, with strong internal reliability (Cronbach  $\alpha = .81 - .82$ ; Livingston & Boyd, 2010). The internal reliability for the present sample was high as well (Cronbach  $\alpha = .93$ ).

In addition to the original ISMI-29, a modified form of the ISMI-29 was piloted where the language of “mental illness” was replaced with “psychological distress.” The intention of this modified version was to measure internalized stigma for having psychological problems. Given the Cronbach’s alpha of this modified measure was .92, compared to that of the original version  $\alpha = .93$  in the present sample, a decision was made to use this modified version to capture self-stigma due to having distress that is not necessarily qualified as “mentally ill.” The language of “psychological distress” is borrowed specifically from the GHQ-12 in order to enhance conceptual parallelism between the construct of mental illness self-stigma and the construct of psychological distress.

**Mindfulness (FFMQ; Appendix C).** The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al. 2006; Baer et al. 2008) was used to measure mindfulness. The FFMQ consists of 39 items using a 5-point Likert scale, ranging from 1 (*Never or very rarely true*) to 5 (*Very often or always true*). The FFMQ assesses five dimensions of mindfulness: observing, describing, non-reactivity, non-judging, and acting with awareness. Sample items include: “I find it difficult to stay focused on what’s happening in the present.”; “I believe some of my thoughts are abnormal or bad and I shouldn’t think that way.”; and “When I have distressing thoughts or images, I judge myself as good or bad depending what the thought is about.” The composite FFMQ score ranges from 39 to 195 with higher scores indicating greater mindfulness. The Cronbach alpha of the composite score ranges from .75 and .91 across different studies, indicating good internal consistency (Baer et al., 2006). The internal reliability for the present

sample was also high (Cronbach  $\alpha = .87$ ).

**Psychological Distress (GHQ-12; Appendix D).** The General Health Questionnaire-12 (GHQ-12; Goldberg & Williams, 1988) is a measure of general psychological distress, or psychiatric morbidity (e.g., “Have you recently lost much sleep over worry?” and “Have you recently been able to enjoy your normal day-to-day activities?”). Items are scored on a 4-point Likert scale, ranging from 0 (*Not at all*) to 3 (*Much more than usual*). While one method involves scoring items on a 0-0-1-1 basis (with the two lower items being scored as 0 and the two higher items scored as 1), this method is primarily used for generating a bi-modal threshold for psychiatric caseness (Goldberg et al., 1997; Goldberg, Oldehinkel, and Ornl, 1998). The validity of a 0-0-1-1 method versus a 0-1-2-3 method is considered to be not significantly different, and the latter method is recommended for cross-sectional analysis as it is more likely to yield a distribution amenable to parametric analysis (Graetz, 1991). Therefore, the present study used the latter method. A composite score, ranging from 0 to 36, was calculated for each individual, with higher scores indicating a worse degree of mental well-being. Participants were asked to rate the frequency with which they experience common psychological stressors. The GHQ-12 has demonstrated excellent psychometric properties, including strong internal reliability ( $\alpha = .82-.86$ , across 9 international samples) (Werneke, et al., 2000). Additionally, the internal reliability for the present sample was strong (Cronbach  $\alpha = .90$ ).

## **Procedure**

This study was approved by the University of Hawai‘i at Mānoa Institutional Review Board. All participants were required to acknowledge their consent before participating. Participants received 3 course credits for their participation. As mentioned above, given the

online nature of the study, internal validity checks were added to the survey package to ensure the credibility of participants' responses.

### **Data Analysis**

First, a bivariate correlation analysis was conducted between self-stigma (two forms of ISMI-29) and psychological distress (GHQ-12) to examine whether there is a statistically significant, positive correlation between the two variables (Hypothesis 1). Second, to test whether the association between mental illness self-stigma and psychological distress can be explained by mindfulness (Hypothesis 2), two mediational analyses were conducted controlling for gender, ethnicity, and sexual orientation, separately for each version of the ISMI-29. These covariates were dummy coded as follows: gender (dummy coded as 0 = female, 1 = male), ethnicity (dummy coded as 0 = non-Asian, 1 = Asian), and sexual orientation (dummy coded as 0 = heterosexual, 1 = not-heterosexual).

A bootstrapped confidence interval for the indirect effect was obtained based upon the procedures described by Preacher and Hayes (2008). The initial causal variable (i.e., predictor variable) was mental illness self-stigma (ISMI-29); the outcome variable (i.e., predicted variable) was psychological distress (GHQ-12); and, the proposed mediating variable was mindfulness (FFMQ). Standardized coefficients were used. Assumptions of normality and linearity were tested.  $\alpha = .05$  two-tailed were used as the criterion for statistical significance.

In addition to the original analytical strategy, several post-hoc analyses were conducted to consider alternative hypotheses, all using procedures based upon Preacher and Hayes (2008). These additional analyses were conducted to examine alternative models that were recommended by thesis committee members during the thesis proposal meeting. First, hierarchical multiple regression was conducted to examine whether mindfulness moderated the relationship between

self-stigma (using each version of the ISMI-29) and psychological distress (GHQ-12) while controlling for gender, ethnicity, and sexual orientation. Second, past treatment experience was analyzed as a moderator of the relationship between each version of mental illness self-stigma and psychological distress. Third, a moderated mediation model was conducted to investigate whether past treatment experience moderated all paths of the originally hypothesized mediation model wherein mindfulness moderated the relationship between mental illness self-stigma and psychological distress. Prior treatment history was captured through “yes/no” responses to the question: “Have you ever sought a professional psychological service (e.g., a service from a psychiatrist, psychologist, counselor, and other psychological professional) for a personal problem?” (see Appendix A).

## **Results**

### **Associations among Study Variables**

Descriptive statistics and correlations among the study variables are shown in Table 1. The results of the bivariate correlation analysis between mental illness self-stigma (ISMI-29) and psychological distress (GHQ-12) reveal that there was a significant positive correlation between the two variables ( $r = .34$  for original ISMI-29,  $N = 127$ ,  $p < .01$ ;  $r = .39$  for modified ISMI-29,  $N = 127$ ,  $p < .01$ ).

### **Mediator Role of Mindfulness between Mental Illness Self-stigma and Psychological Distress**

To test whether the association between mental illness self-stigma and psychological distress could be explained by mindfulness, a mediational analysis was conducted controlling for gender, ethnicity, and sexual orientation. A bootstrapped confidence interval for the *ab* indirect effect was obtained based upon the procedures described by Preacher and Hayes (2008). The

initial causal variable was mental illness self-stigma (ISMI-29); the outcome variable was psychological distress (GHQ-12); and, the proposed mediating variable was mindfulness (FFMQ; see Figure 1 for the path diagram that corresponds to this mediation hypothesis).

Assumptions of normality and linearity were tested. In this set of analyses,  $\alpha = .05$  two-tailed was used as the criterion for statistical significance. The following coefficients are standardized.

The total effect of mental illness self-stigma on psychological distress (path  $c$ ) was statistically significant,  $c = .1599$ ,  $t(122) = 2.9548$ ,  $p < .01$ . Furthermore, mental illness self-stigma was uniquely associated with mindfulness (path  $a$ ),  $a = -.2505$ ,  $t(122) = -2.0233$ ,  $p < .05$ . Also, when controlling for mental illness self-stigma, mindfulness was uniquely associated with psychological distress (path  $b$ ),  $b = -.1637$ ,  $t(122) = -5.5430$ ,  $p < .001$ . The estimated direct effect of mental illness self-stigma on psychological distress, while controlling for mindfulness, (path  $c'$ ) was  $c' = .1189$ ,  $t(120) = 2.9548$ ,  $p < .01$ . Psychological distress was predicted well from mental illness self-stigma and mindfulness, with adjusted  $R^2 = .3095$  and  $F(5, 120) = 10.3973$ ,  $p < .001$ .

The indirect effect,  $ab$ , was .0410. Using the SPSS script for the indirect procedure (Preacher & Hayes, 2008), bootstrapping was performed; 5,000 samples were requested; a bias-corrected and accelerated confidence interval (CI) was created for  $ab$ . For this 95% CI, the lower limit was .0047, and the upper limit was .0939. Because this CI did not include zero ( $ab \neq 0$ ), the null hypothesis  $ab = 0$  was rejected. By this criteria, the indirect effect of mental illness self-stigma on psychological distress through mindfulness was statistically significant. The direct path from mental illness self-stigma to psychological distress ( $c'$ ) was also statistically significant; therefore, the effects of mental illness self-stigma on psychological distress were partially mediated by mindfulness.

Third, a second mediation model was examined, including identical variables to the first mediation model above, but replacing mental illness self-stigma with what was termed *psychological distress self-stigma*, which was measured through a modified version of ISMI-29 (see Figure 3). The mediation analysis used the same control variables of gender, ethnicity, and sexual orientation.

The total effect of psychological distress self-stigma on psychological distress (path  $c$ ) was statistically significant,  $c = .1904$ ,  $t(122) = 3.1178$ ,  $p < .01$ . Furthermore, psychological distress self-stigma was uniquely associated with mindfulness (path  $a$ ),  $a = -.4119$ ,  $t(122) = -3.4491$ ,  $p < .001$ . Also, when controlling for psychological distress self-stigma, mindfulness was uniquely associated with psychological distress (path  $b$ ),  $b = -.1510$ ,  $t(122) = -4.9754$ ,  $p < .001$ . The estimated direct effect of psychological distress self-stigma on psychological distress, while controlling for mindfulness, (path  $c'$ ) was  $c' = .1283$ ,  $t(120) = 3.1178$ ,  $p < .01$ .

Psychological distress was predicted well from psychological distress self-stigma and mindfulness, with adjusted  $R^2 = .3149$  and  $F(5,120) = 10.6639$ ,  $p < .001$ . The indirect effect,  $ab$ , was .0622. When bootstrapping was performed, the lower limit of the confidence interval was .0468, and the upper limit was .2098. Because this CI did not include zero ( $ab \neq 0$ ), the null hypothesis  $ab = 0$  was rejected; the indirect effect of psychological distress self-stigma on psychological distress through mindfulness was statistically significant. The direct path from psychological distress self-stigma to psychological distress ( $c'$ ) was also statistically significant; therefore, the effects of psychological distress self-stigma on psychological distress were only partially mediated by mindfulness.

### Post-hoc Analyses



Additional post-hoc analyses were conducted. Mindfulness was examined as a potential moderator of the relationship between mental illness self-stigma (using each version of the ISMI-29) and psychological distress (GHQ-12). When mental illness self-stigma (ISMI-29) was proposed as the predictor variable, latent interactions were not found to be statistically significant for neither mindfulness ( $p = .082$ ) nor prior treatment history ( $p = .503$ ). Similarly, when psychological distress self-stigma (ISMI-29-M) was the predictor variable, latent interactions were not found to be statistically significant for neither mindfulness ( $p = .543$ ) nor prior treatment history ( $p = .243$ ).

Furthermore, a moderated mediation analysis was conducted to see whether prior treatment history moderated the mediation model proposed above, using the two versions of ISMI-29. Findings revealed that past treatment history did not moderate the indirect effects of mental illness self-stigma on psychological distress through mindfulness.

### **Discussion**

The present research examined whether there was a significant positive relationship between mental illness self-stigma and psychological distress, and whether or not mindfulness mediated that relationship. Furthermore, an alternative mediation model was tested with psychological distress self-stigma as a potential predictor.

Findings revealed that mental illness self-stigma and psychological distress self-stigma were both positively associated with psychological distress. Mindfulness was found to partially mediate the relationship between mental illness self-stigma and psychological distress and between psychological distress self-stigma and psychological distress. To summarize, the findings suggest that the construct of mindfulness helps to explain the relationship between the two conceptualizations of mental illness self-stigma and psychological distress.

### **Consistency with Previous Findings**

Broadly, these results support the current literature which found a significant positive association between stigma, as well as self-stigma, and negative behavioral outcomes (e.g., Masuda & Latzman, 2011). The current study also offers preliminary evidence of mindfulness as a partial mediator that may serve as an underlying mechanism in the relationship between self-stigma and negative psychological outcomes (e.g., Masuda & Wendell, 2010; Masuda et al., 2011; Gayner et al., 2012).

Additionally, these findings offer a number of contributions to the extant literature. First, the present study extends research on stigma and its association with negative outcomes to the unique phenomenon of mental illness self-stigma and its linkage to psychological distress. No known study to date has examined mental illness self-stigma and its relationship with psychological distress. As mentioned previously, prior evidence has examined the association between psychological distress (GHQ-12) and public stigma (SAB; Masuda & Latzman, 2011); mental health self-stigma and help seeking attitudes (Eisenberg et al., 2009; Vogel, Wade, & Haake, 2006) as well as treatment compliance (Fung et al., 2007); self-stigma and quality of life (Yanos et al., 2008; Vauth et al., 2007) as well as avoidant coping strategies (Vauth et al., 2007); and self-stigma with vitiligo (Kent, 1999). In sum, the present findings contribute to research on stigma in general, which spans the social sciences, by further illuminating the negative psychological effects associated with internalizing negative stereotypes for mental illness.

Second, the results advance knowledge on the underlying processes of mental illness self-stigma as well as research on the mediating effects of mindfulness (e.g., Masuda & Latzman, 2011). While prior research has examined psychological outcomes related to mental illness self-stigma (e.g., Eisenberg et al., 2009; Vogel, Wade, & Haake, 2006; Fung et al., 2007; Yanos et

al., 2008; Vauth et al., 2007), few studies have empirically examined potential underlying mechanisms which could account for mental illness self-stigma's relationship to such outcomes (e.g., help-seeking attitudes, treatment compliance, quality of life, avoidant coping strategies). While some research has posed mindfulness as a critical explanatory variable (Merish et al., 2015) or framed psychological flexibility as a mediator between stigma and psychological distress (e.g., Masuda & Latzman, 2011), no known study has examined mindfulness' potential mediating role on the relationship between internalized stigma for mental illness (ISMI-29) and negative mental health outcomes. The present evidence of partial mediation suggests that this link is established, at least in part, by mindfulness, contributing to the conceptualization of internalized stigma's underlying processes.

Third, the piloting of a modified version of the ISMI-29 also provides a new conceptualization of internalized stigma that is not only applicable to diagnosable psychological disorders (as operationalized by the language of "mental illness"), but also to psychological distress in general. Historically, stigma research has highlighted the negative impact of stereotypes on the groups they target (Link & Phelan, 2001), and mental illness self-stigma research has likewise focused on mental health patient populations that are exclusively clinical in nature (Ritsher et al., 2003). However, non-clinical individuals may experience shame, loss of self-esteem, or other features of self-stigma in connection with sub-clinical levels of sleeplessness, sadness, inability to concentrate, or other forms of psychological distress. Negative stereotypes about the mentally ill may be attributable to general cultural attitudes about the undesirability of particular emotions such as sadness, fear, and anger. These social ideals surrounding emotional expression are frequently in conflict with the inevitable nature of emotions, thus potentially producing self-stigma for an individual who experiences general

features of psychological distress. The present conceptualization of psychological distress self-stigma using a modified version of the ISMI-29 may be worth researching in future studies, especially given the high reliability of the piloted version (Cronbach  $\alpha = .92$ ).

Fourth, the conceptualization of psychological distress self-stigma may be particularly helpful in understanding distress in college students, which served as the sample used in this study. The relationship between self-stigma and psychological distress for college students has been researched extensively (e.g., Eisenberg et al., 2009; Vogel, Wade, & Haake, 2006; Masuda & Latzman, 2011), but not necessarily psychological distress self-stigma. Students who have had either little or only recent history of psychological services, no formal diagnosis, or are reluctant to seek services, may not identify with mental illness labels or fear association with them. Prior research has suggested that identification with a stigmatized group is an important moderator of the relationship between stigma and self-esteem (Crocker & Major, 1989). If research on self-stigma assumes that individuals who are mentally ill or distressed will readily identify with the “mentally ill,” then important additional information (e.g., psychological distress self-stigma) may be overlooked. Therefore, future research on college students could benefit from measuring processes of self-stigma that are more generally associated with negative emotions and distressing experiences, as opposed to the formal language of “mental illness.”

Fifth, and relatedly, these results suggest that self-stigma for mental illness is prevalent in a non-clinical population. Prior research has historically focused on the experience of individuals with diagnosable psychological disorders seeking treatment based upon the premise that self-stigma processes would be higher for those who are negatively stereotyped (Ritsher et al., 2003). The following results suggest that the association between self-stigma and psychological distress may affect non-clinical populations as well.

### **Theoretical Implications**

Multiple theoretical implications may be drawn from results of the present study. The positive association between mental illness self-stigma and psychological distress suggests that there is a systematic link between psychological distress and an individual's internalization of perceived norms surrounding mental illness. This finding is consistent with stigma as conceptualized by Link and Phelan (2001), whereby verbal labels connected to mental illness are susceptible to negative stereotypes, which alienate mentally ill individuals and result in feelings of lost status and discrimination. These negative associations held by the public (i.e., stigma) are internalized by individuals whom are diagnosed with or identify with mental illness labels (i.e., self-stigma; Corrigan, 2004). Self-stigma is often associated with negative outcomes (e.g., Fung et al., 2007; Yanos et al., 2008; Vauth et al., 2007; Kent, 1999) and is measurable on an individual level as it applies to mental illness (Ritsher et al., 2003). The present study's results align with these theoretical assumptions and extend their applicability to a non-clinical population. The association between psychological distress self-stigma with distress in a non-clinical population may suggest that the aforementioned stigma processes (i.e. the transformation of neutral verbal categories into internalized stereotypes) may negatively impact a population that varies in its identification with mental illness labels. These findings also align with research suggesting that stigma negatively impacts non-clinical individuals who harbor such views (Masuda et al., 2009).

A broader theoretical framing of human language and psychological processes (e.g., RFT; Hayes, et al., 2001) can help to interpret these findings. Namely, a behavior analytic account of stigma processes identifies the reification of verbal labels as an underestimated source of mental suffering, which can affect both the stigmatized and the stigmatizer, who can be both

one and the same (Hayes et al., 2001; Masuda et al., 2009). The results of the current study's mediation analysis may support the conceptualization of self-stigma and mindfulness based upon an RFT account. RFT posits that the psychological distress associated with self-stigma is facilitated by cognitive fusion, or the tendency to become cognitively consumed or attached to the literal meaning of a verbal label (e.g. "mental illness," "depressed," etc.). Via cognitive fusion, an individual becomes removed from the actuality of subjective experience and mentally preoccupied with the verbal associations connected to the verbal label (Hayes et al., 2001). Fusion to the connotations of verbal labels (Link & Phelan, 2001) leaves individuals vulnerable to negative associations outside of their control and disconnected from personal experience (Hayes et al., 2012).

Based upon this theoretical conceptualization of the internalization of stigma surrounding mental illness and psychological distress, mindfulness (a construct encompassing cognitive defusion) would be expected to facilitate the association between mental illness self-stigma and psychological distress. The results of the present study, suggesting a partial mediation of mindfulness on the link between these two variables, lends credence to this theoretical perspective.

### **Interpretation of Non-significant Results**

The non-significant results of the post-hoc analyses mentioned above also warrant attention and could have important implications. First, Levin, Luoma, and Haegar (2015) have suggested that mindfulness serves a moderating role in the relationship between internal experiences and other internal behaviors (e.g. dysphoric mood and depressive cognitions). In accordance with an RFT account, mindfulness is proposed as the underling mechanism which decouples the link between internal processes (e.g. self-stigma) and resultant internal effects (e.g.

psychological distress). In the present study, however, the moderation analysis was found to be insignificant, suggesting that while mindfulness may help to account for the variance in the relationship between mental illness self-stigma and psychological distress, the positive association between these two variables does not significantly decrease in individuals who are more mindful as would be expected given the framing of Levin and colleagues (2015). The potential theoretical implications of mindfulness as a significant moderator are therefore not supported by the results from the current study.

Second, prior treatment history did not moderate the association between these two variables, suggesting that the association did not depend upon previous use of psychological services. Likewise, prior treatment history did not moderate any path within the mediation model. Further research is necessary to understand whether self-stigma processes are moderated by clinical severity or prior treatment.

### **Clinical Implications**

The study has several practical implications for clinical treatment. Given the present findings, a mindfulness-based intervention targeting mental illness or psychological distress self-stigma may be useful in reducing psychological distress for college students. The finding that mindfulness mediates the link between two versions of mental illness self-stigma and psychological distress could offer preliminary support for this approach. Multiple studies have supported the effectiveness of mindfulness-based interventions in increasing trait mindfulness, which is purported to be a critical factor in decreasing negative psychological and behavioral outcomes (Segal, Williams, & Teasdale, 2012; Kabat-Zinn & Hanh, 1990). Research on mindfulness treatments for self-stigma are nascent, but promising. As mentioned above, an MBSR intervention study that targeted self-stigma in homosexual men diagnosed with HIV was

found to be effective in reducing avoidance, negative affect, and depression (Gayner et al., 2012). Similarly, Masuda and colleagues (2007) found that a modified mindfulness-based intervention, acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999), was effective in reducing stigmatizing attitudes toward the mentally ill. This intervention was effective for college students with varying levels of psychological flexibility, whereas a psychoeducation control condition was only effective for those who were already high in psychological flexibility. Given the results of this intervention for stigmatizing attitudes *toward others*, a similarly designed mindfulness-based intervention for college students may be effective for lowering stigma *toward oneself*.

A major theoretical tenet of ACT is that undermining processes of psychological inflexibility, such as cognitive fusion, is critical to the effectiveness of mindfulness approaches (Hayes, Follette, & Linehan, 2004). A mindfulness-based approach to self-stigma could focus on identifying individuals' habits of fusing to mental illness labels and explore any distressing thoughts, emotions, or sensations associated with them. By calling attention to experiences within the present moment as they actually are, mindfulness could potentially help a self-stigmatizing individual become more aware of how personal experiences of mental illness or distress differs from the proliferated negative associations connected to labels (e.g. "depression," "anxiety"). Mindfulness-based interventions also encourage an exploratory relationship with experiences and a reluctance to intellectualize or label them (Segal, Williams, & Teasdale, 2012) in ways that can perpetuate cognitive fusion processes. By changing one's relationship with painful experiences, from an orientation of conceptualization and control to one of awareness, openness, and flexibility, participants are able to re-discover their internal experiences in a way that is cognizant of, but decoupled from, stigmatizing labels (Levin, Luoma, & Haeger, 2015).



**Limitations**

The present study has several methodological and conceptual weaknesses that limit interpretation of the present results. Generalizability is limited due to the confines of the sample. Participants were exclusively college students recruited from a single university in Hawai'i, which may limit the applicability of the present study, to, for example, exclusively clinical populations or samples that are significantly different in age, education, sociocultural climates (e.g., rural populations or other college student populations within the U.S.). With respect to the evaluation of ethnicity, due to Hawai'i's unique geographic location and demographic composition, the student sample is majority Asian, which may limit generalizability to student populations that have higher percentages of European-American, African-American, or Latino students. Also, only students enrolled in Psychology courses could participate in the study, which may be a source of sampling bias (i.e. students of Psychology may be more likely to seek psychological services or may be higher in mindfulness). Other limiting factors of the population could be unique regional or university culture or students' socioeconomic statuses.

The measures employed in the study are limited for a number of reasons. Although the survey package included multiple measures of stigma, mindfulness, and psychological distress, only one measure was used to capture each construct in the present analysis (with the addition of a modified stigma measure) whereas a multi-factor model might potentially capture other features of these constructs. Psychological distress, in particular, could be validated by more conventional measures of anxiety and depression in order to be applied to more clinical populations. Furthermore, the self-report surveys are subjective in nature and therefore liable to misrepresentation of personal characteristics. Likewise, all of the self-report surveys used Likert items, which are ordinal approximations of dimensional characteristics. Numerous critiques have

been published on the use of Likert composite scores as continuous variables in regression analyses (e.g., Bishop & Herron, 2015), which was the quantitative assessment chosen for this study. Corroborating evidence in the form of implicit measures, behavioral data, or neurophysiological evidence is also needed to thoroughly understand complex processes like mindfulness. There are numerous forms of assessment using implicit measures or neurophysiological data to supplement self-report measures of mindfulness (Lutz et al., 2015) and psychological distress, but none of them have been employed here due to methodological constraints and feasibility concerns. Further replication studies would benefit from a more nuanced multiple measure approach using different self-report measures as well as other forms of behavioral and physiological evidence.

While mindfulness was found to be a partial mediator, the indirect effect was still low, suggesting there could be other important, possibly more significant, mediators in the relationship between mental illness self-stigma and psychological distress. Other potential mediators could include shame (Cohen, Wolf, Panter, & Insko, 2011) and self-criticism (Rose & Rimes, 2018), which are hypothesized as component parts of self-stigma. Additionally, distress tolerance (Brown, Lejuez, Kahler, & Strong, 2002), mood awareness (Wismeijer, Van Assen, Sijtsma, & Vingerhoets, 2009), and psychological flexibility (Levin, Luoma, Lillis, Hayes, & Vilardaga, 2014) may better account for the relationship than mindfulness.

Additionally, while the use of the ISMI-29 has been replicated and is considered to be a reliable measure of mental illness self-stigma, the introduction of a modified version must be approached cautiously. There is no prior literature or measure proposing the construct of psychological distress self-stigma, therefore its construct validity requires further psychometrically focused research. While the intention of replacing the language of “mental

illness” with “psychological distress” is intended to capture self-stigma with respect to more dimensional processes, no evidence is presented to validate that such a construct is valid. Additionally, there may be significant conceptual overlap between the construct of psychological distress self-stigma and psychological distress, resulting in multi-collinearity. Also, the replacement of “mental illness” with “psychological distress” language may not be relevant for particular items (e.g. “Psychologically distressed people tend to be violent.”). The reliability of each individual item was at least good ( $0.8 \leq \alpha < 0.9$ ), however, suggesting that no item was errant. Future studies are needed with different samples to replicate the present findings and confirm external validity of the results. Furthermore, in order to confirm the measure’s external reliability, psychometric testing of its correlation with other measures of self-stigma are needed.

Finally, as mentioned above, the present study is cross-sectional and correlational in nature. Therefore, it is difficult to infer causal relationships in this type of proposed model (Cliff, 1983). Some research suggests that the relationship between mindfulness and psychological distress is mediated by mental illness self-stigma (e.g., Merish et al, 2015), which may be a more appropriate formulation of the constructs of interest. Further research, including multiple time points, is needed to assess the potential causal relations between the psychological constructs presented. Ideally, future studies could include pre- and post- measures to test an empirically validated mindfulness-based intervention that could potentially improve mindfulness levels within individuals.

In general, there is a need for further research to replicate the findings of the current study. Research on the processes underlying mental illness self-stigma is still nascent in nature. Likewise, few studies have examined the relationship between mindfulness and self-stigma processes. Furthermore, the applicability of the proposed mediation model to clinical treatment

settings can be tested by rigorous studies of mindfulness interventions, ideally randomized controlled trials.

### **Conclusion**

Despite these limitations, the present study successfully investigated the link between two versions of mental illness self-stigma and psychological distress, and whether or not mindfulness mediates these relationships. The results indicated that there is a positive association between both versions of self-stigma and distress, and that these links are partially mediated by mindfulness. These findings support prior research on the mediating effect of mindfulness (Masuda & Wendell, 2010; Masuda et al., 2011) and are explainable using an RFT theoretical framework, which purports cognitive fusion as the linking mechanism between self-stigma and negative behavioral outcomes (Hayes et al., 2001; Levin, Luoma, & Haeger, 2015). Such a model supports the possible clinical utility of mindfulness-based interventions (e.g., Segal, Williams, & Teasdale, 2012; Kabat-Zinn & Hanh, 1990) to target self-stigma and mitigate the distress connected to it (Gayner et al., 2012; Masuda et al., 2007).

While elements of the proposed mediation model (i.e. self-stigma, distress, mindfulness) have been investigated with approximate constructs and scales, the arrangement of these particular operationalized scales (e.g., ISMI-29, GHQ-12, FFMQ) and the application of mediation analysis was unique to this study. Furthermore, the ISMI-29 had not yet been applied to a non-clinical population, nor an undergraduate population specifically. Additionally, the piloting of a version of the ISMI-29 using the language of “psychological distress” was also novel. More research is needed to investigate whether non-clinical populations are affected by self-stigma, whether its association with negative outcomes is mediated by mindfulness, and

whether or not mindfulness-based interventions targeting self-stigma are effective in reducing such outcomes.

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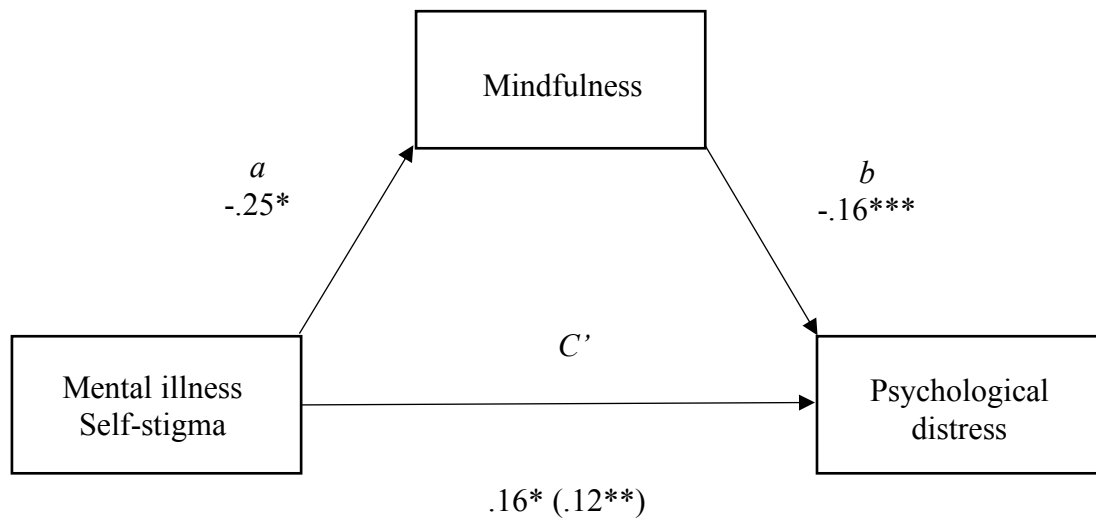
Table 1.

Means, standard deviations, and zero-order relations between all variables

	1	2	3	4	5	6	7	8
1. Psychological distress (GHQ-12) --								
2. Internalized stigma (ISMI-29)	.34**	--						
3. Internalized stigma (ISMI-29-M)	.39**	.76**	--					
4. Mindfulness (FFMQ)	-.49*	-.19*	.30**	--				
5. Gender	-.07	-.05	-.07	.00	--			
6. Ethnicity	.10	.02	-.03	-.06	.03	--		
7. Sexual Orientation	-.11	-.23*	-.21*	.05	.02	.10	--	
8. Treatment History	-.15	-.40*	-.39*	.04	.18*	.23**	.30**	--
<i>M</i>	13.34	50.69	52.00	123.73	.36	.31	.90	1.53
<i>SD</i>	6.05	12.11	12.13	16.10	.48	.46	.30	.50

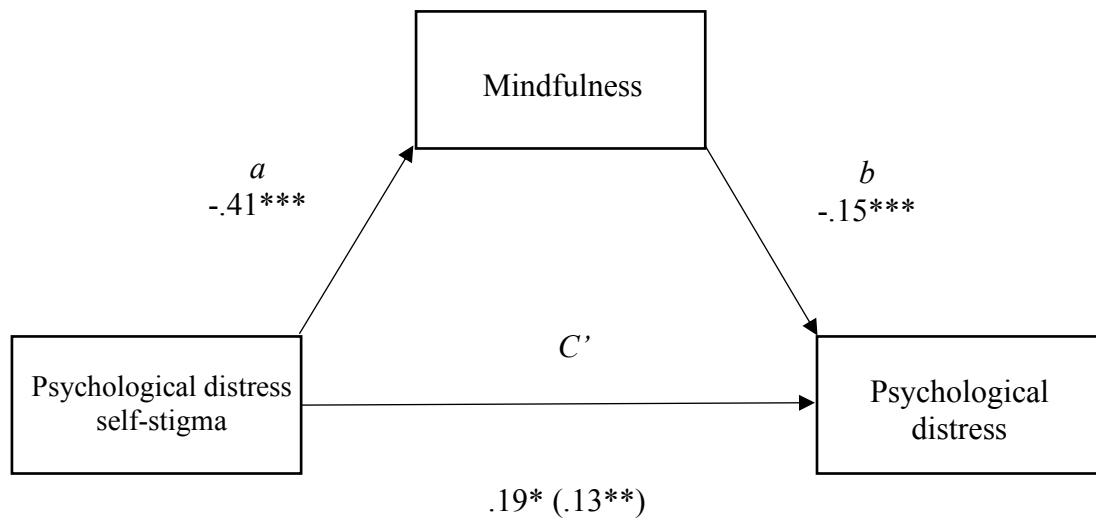
*Note:* *GHQ-12* general health questionnaire, *ISMI-29* internalized stigma for mental illness scale, *ISMI-29-M* modified internalized stigma for mental illness scale (using language of “psychological distress), *FFMQ* five factor mindfulness questionnaire.

*N* = 127, \**p* < .05, \*\**p* < .01



*Figure 1.* Standardized regression coefficients for the relationship between mental illness self-stigma and psychological distress as mediated by mindfulness. The standardized regression coefficient between mental illness self-stigma and psychological distress, controlling for mindfulness, is in parentheses.  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ , all two-tailed.





*Figure 2.* Standardized regression coefficients for the relationship between mental illness self-stigma and psychological distress as mediated by mindfulness. The standardized regression coefficient between mental illness self-stigma and psychological distress, controlling for mindfulness, is in parentheses.  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ , all two-tailed.

## Appendix A

**Demographic Information**

Please answer the following demographic questions.

1. Age \_\_\_\_

2. Gender (please select one).

- Male
- Female
- Other \_\_\_\_\_ (If you marked other, please specify.)

3. Ethnicity (please select one).

- Native American
- Hispanic
- Asian
- Pacific Islander
- White (non-Hispanic)
- Black (non-Hispanic)
- Other \_\_\_\_\_ (If you marked other, please specify.)
- Bi-racial/Multi-cultural
- Hawaiian

4. If you identified as “Hispanic” in the question above, please specify your Hispanic background (e.g., Mexican, Cuban, etc). If you do not identify as Hispanic, please check the box below located next to: “Check this box if you do not want to provide an answer for this question.”

5. If you identified as “Asian” in the question above, please specify your Asian background (e.g., Indian, Korean, etc). If you do not identify as Asian, please check the box below located next to: “Check this box if you do not want to provide an answer for this question.”

6. If you identified as “Other” in the question above, please specify your ethnic background below. If you did not choose “Other”, please check the box below located next to: “Check this box if you do not want to provide an answer for this question.”

7. If you identified as “Bi-racial/Multi-cultural” in the question above, please specify your bi-racial/multicultural background below. If you did not choose “Bi-racial/Multi-cultural”, please check the box below located next to: “Check this box if you do not want to provide an answer for this question.”

8. Have you ever sought a professional psychological service (e.g., a service from a psychiatrist, psychologist, counselor, and other psychological professional) for a personal problem?

1). Yes 2). No

9. If you said “yes” on the question just above, please rate this experience:

1	2	3	4	5	6	7
Very			Neutral			Very
unsatisfied						satisfied

10. Have you ever been prescribed with and taken a psychotropic medication (e.g., anti-depressant, anti-anxiety medications) for your personal problems (e.g., depression, ADHD, etc)?

1). Yes 2). No

11. If you said “yes” on the question just above, please rate this experience:

1	2	3	4	5	6	7
Very			Neutral			Very
unsatisfied						satisfied

12. Do you have a close relationship with someone (e.g., best friend, family member, or relative) who has seen a psychological professional(s), such as a psychiatrist, psychologist, or counselor?

1). Yes 2). No

13. If you said “yes” on the question just above (knowing someone who has seen a psychological professional), please rate your experience of that person you know. If you know more than one person who has seen a psychological professional, please pick your experience with the person whom you know the most.

1	2	3	4	5	6	7
Very			Neutral			Very
unsatisfied						satisfied

14. Do you have a close relationship with someone (e.g., best friends, family members, or relatives) who has been diagnosed with a certain psychological disorder (e.g., severe depression, panic attacks, schizophrenia, eating disorder, alcohol or substance use disorder, or others)?

1). Yes 2). No

15. If you said “yes” on question 14, please rate your experience of that person who has been diagnosed. If you know more than one person who has been diagnosed with a psychological disorder, please pick your experience with the person whom you know the most.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Very  
unsatisfied

Neutral

Very  
satisfied

16. What is your religion/spiritual practice?

- Baha'l
- Buddhist
- Hawaiian Indigenous Beliefs
- Hindu
- Islam
- Jewish
- Mormon
- Protestant
- Roman Catholic
- Southern Baptist
- United Methodist
- Other\_\_\_\_\_ (please specify)
- None

17. Do you currently practice the religion/spirituality you just identified?

1). Yes    2). No

18. What is your sexual orientation?

- Heterosexual
- Homosexual
- Bisexual
- Oher\_\_\_\_\_ (please specify)

19. How do you describe your family's financial situation as you were growing up?

- Poor
- Working class
- Middle class
- Upper middle class
- Wealthy

## Appendix B

**Internalized Stigma of Mental Illness Inventory (ISMI)**

We are going to use the term "mental illness" in the rest of this questionnaire, but please think of it as whatever you feel is the best term for it.

For each question, please mark whether you strongly disagree (1), disagree (2), agree (3), or strongly agree (4).

	Strongly disagree	Disagree	Agree	Strongly agree
1. I feel out of place in the world because I have a mental illness.	1	2	3	4
2. Mentally ill people tend to be violent.	1	2	3	4
3. People discriminate against me because I have a mental illness.	1	2	3	4
4. I avoid getting close to people who don't have a mental illness to avoid rejection.	1	2	3	4
5. I am embarrassed or ashamed that I have a mental illness.	1	2	3	4
6. Mentally ill people shouldn't get married.	1	2	3	4
7. People with mental illness make important contributions to society.	1	2	3	4
8. I feel inferior to others who don't have a mental illness.	1	2	3	4
9. I don't socialize as much as I used to because my mental illness might make me look or behave "weird."	1	2	3	4
10. People with mental illness cannot live a good, rewarding life.	1	2	3	4
11. I don't talk about myself much because I don't want to burden others with my mental illness.	1	2	3	4
12. Negative stereotypes about mental illness keep me isolated from the "normal" world.	1	2	3	4
13. Being around people who don't have a mental illness makes me feel out of place or inadequate.	1	2	3	4
14. I feel comfortable being seen in public with an obviously mentally ill person.	1	2	3	4
15. People often patronize me, or treat me like a child, just because I have a mental illness.	1	2	3	4
16. I am disappointed in myself for having a mental illness.	1	2	3	4
17. Having a mental illness has spoiled my life.	1	2	3	4
18. People can tell that I have a mental illness by the way I look.	1	2	3	4
19. Because I have a mental illness, I need others to make most decisions for me.	1	2	3	4
20. I stay away from social situations in order to protect my family or friends from embarrassment.	1	2	3	4
21. People without mental illness could not possibly understand me.	1	2	3	4
22. People ignore me or take me less seriously just because I have a mental illness.	1	2	3	4
23. I can't contribute anything to society because I have a mental illness.	1	2	3	4
24. Living with mental illness has made me a tough survivor.	1	2	3	4
25. Nobody would be interested in getting close to me because I have a mental illness.	1	2	3	4
26. In general, I am able to live my life the way I want to.	1	2	3	4
27. I can have a good, fulfilling life, despite my mental illness.	1	2	3	4
28. Others think that I can't achieve much in life because I have a mental illness.	1	2	3	4

	Strongly disagree	Disagree	Agree	Strongly agree
29. Stereotypes about the mentally ill apply to me.	1	2	3	4

**Reference:**

Ritsher (Boyd), J. Otilingam, P. O., Grajales, M. (2003). Internalized stigma of mental illness: Psychometric properties of a new measure. *Psychiatry Research*, 121, 31-49.

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### Modified Version of Internalized Stigma of Mental Illness Inventory (ISMI)

We are going to use the term "mental illness" in the rest of this questionnaire, but please think of it as whatever you feel is the best term for it.

For each question, please mark whether you strongly disagree (1), disagree (2), agree (3), or strongly agree (4).

	Strongly disagree	Disagree	Agree	Strongly agree
1. I feel out of place in the world because I have a psychological distress.	1	2	3	4
2. Psychologically distressed people tend to be violent.	1	2	3	4
3. People discriminate against me because I have psychological distress.	1	2	3	4
4. I avoid getting close to people who don't have psychological distress to avoid rejection.	1	2	3	4
5. I am embarrassed or ashamed that I have a psychological problem.	1	2	3	4
6. Psychologically distressed people shouldn't get married.	1	2	3	4
7. People with psychological distress make important contributions to society.	1	2	3	4
8. I feel inferior to others who don't have psychological distress.	1	2	3	4
9. I don't socialize as much as I used to because my psychological distress might make me look or behave "weird."	1	2	3	4
10. People with psychological distress cannot live a good, rewarding life.	1	2	3	4
11. I don't talk about myself much because I don't want to burden others with my psychological distress.	1	2	3	4
12. Negative stereotypes about psychological distress keep me isolated from the "normal" world.	1	2	3	4
13. Being around people who don't have psychological distress makes me feel out of place or inadequate.	1	2	3	4
14. I feel comfortable being seen in public with an obviously psychologically distressed person.	1	2	3	4
15. People often patronize me, or treat me like a child, just because I have psychological distress.	1	2	3	4
16. I am disappointed in myself for having psychological distress.	1	2	3	4
17. Having psychological distress has spoiled my life.	1	2	3	4
18. People can tell that I have psychological distress by the way I look.	1	2	3	4
19. Because I have psychological distress, I need others to make most decisions for me.	1	2	3	4
20. I stay away from social situations in order to protect my family or friends from embarrassment.	1	2	3	4
21. People without psychological distress could not possibly understand me.	1	2	3	4

	Strongly disagree	Disagree	Agree	Strongly agree
22. People ignore me or take me less seriously just because I have psychological distress.	1	2	3	4
23. I can't contribute anything to society because I have psychological distress.	1	2	3	4
24. Living with psychological distress has made me a tough survivor.	1	2	3	4
25. Nobody would be interested in getting close to me because I have psychological distress.	1	2	3	4
26. In general, I am able to live my life the way I want to.	1	2	3	4
27. I can have a good, fulfilling life, despite my psychological distress.	1	2	3	4
28. Others think that I can't achieve much in life because I have psychological distress.	1	2	3	4
29. Stereotypes about the psychologically distressed apply to me.	1	2	3	4

Reference:

Ritsher (Boyd), J. Otilingam, P. O., Grajales, M. (2003). Internalized stigma of mental illness: Psychometric properties of a new measure. *Psychiatry Research*, 121, 31-49.

## Appendix C

**Five Facet Mindfulness Questionnaire (FFMQ)**

Please rate each of the following statements with the number that best describes *your own opinion* of what is *generally true for you*.

1 = never or very rarely true

2 = rarely true

3 = sometimes true

4 = often true

5 = very often or always true

- 
- 1. When I'm walking, I deliberately notice the sensations of my body moving.
  - 2. I'm good at finding words to describe my feelings.
  - 3. I criticize myself for having irrational or inappropriate emotions.
  - 4. I perceive my feelings and emotions without having to react to them.
  - 5. When I do things, my mind wanders off and I'm easily distracted.
  - 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
  - 7. I can easily put my beliefs, opinions, and expectations into words.
  - 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
  - 9. I watch my feelings without getting lost in them.
  - 10. I tell myself I shouldn't be feeling the way I'm feeling.
  - 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
  - 12. It's hard for me to find the words to describe what I'm thinking.
  - 13. I am easily distracted.
  - 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
  - 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
  - 16. I have trouble thinking of the right words to express how I feel about things.
  - 17. I make judgments about whether my thoughts are good or bad.
  - 18. I find it difficult to stay focused on what's happening in the present.
  - 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
  - 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
  - 21. In difficult situations, I can pause without immediately reacting.
  - 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.
  - 23. It seems I am "running on automatic" without much awareness of what I'm doing.
  - 24. When I have distressing thoughts or images, I feel calm soon after.
  - 25. I tell myself that I shouldn't be thinking the way I'm thinking.
  - 26. I notice the smells and aromas of things.
  - 27. Even when I'm feeling terribly upset, I can find a way to put it into words.
  - 28. I rush through activities without being really attentive to them.



- \_\_\_\_\_ 29. When I have distressing thoughts or images I am able just to notice them without reacting.
- \_\_\_\_\_ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.
- \_\_\_\_\_ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
- \_\_\_\_\_ 32. My natural tendency is to put my experiences into words.
- \_\_\_\_\_ 33. When I have distressing thoughts or images, I just notice them and let them go.
- \_\_\_\_\_ 34. I do jobs or tasks automatically without being aware of what I'm doing.
- \_\_\_\_\_ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
- \_\_\_\_\_ 36. I pay attention to how my emotions affect my thoughts and behavior.
- \_\_\_\_\_ 37. I can usually describe how I feel at the moment in considerable detail.
- \_\_\_\_\_ 38. I find myself doing things without paying attention.
- \_\_\_\_\_ 39. I disapprove of myself when I have irrational ideas.

## Appendix D

**General Health Questionnaire (GHQ)**

We would like to know if you have had any medical complaints, and how your health has been in general, *over the past few weeks*. Please answer ALL questions by circling the answer which you think most nearly applied to you. Remember that we want to know about present and recent complaints, not those that had in the past.

Have you recently:

1.	been able to concentrate on whatever you're doing?	better than usual	same as usual	less than usual	much less than usual
2.	lost much sleep over worry?	not at all	no more than usual	rather more than usual	much more than usual
3.	felt that you are playing a useful part in things?	more so than usual	same as usual	less useful than usual	much less useful
4.	felt capable of making decision about things?	more so than usual	same as usual	less so than usual	much less capable
5.	felt constantly under strain?	not at all	no more than usual	rather more than usual	much more than usual
6.	felt you couldn't overcome your difficulties?	not at all	no more than usual	rather more than usual	much more than usual
7.	been able to enjoy your normal day-to-day activities?	more so than usual	same as usual	less so than usual	much less than usual
8.	been able to face up to your problem?	more so than usual	same as usual	less able than usual	much less able
9.	been feeling unhappy and depressed?	not at all	no more than usual	rather more than usual	much more than usual
10.	been losing confidence in yourself?	not at all	no more than usual	rather more than usual	much more than usual
11.	been thinking of yourself as a worthless person?	not at all	no more than usual	rather more than usual	much more than usual
12.	been feeling reasonably happy, all things considered?	more so than usual	about same as usual	less so than usual	much less than usual